TECHNICAL INFORMATION

Models No. ► BHP453

Description ► 18V Cordless Hammer Driver Drill 13mm (1/2")

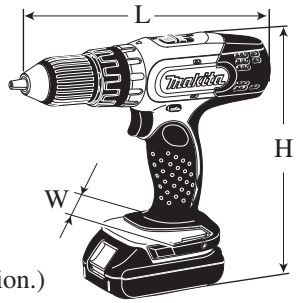
CONCEPT AND MAIN APPLICATIONS

Model BHP453 is a cost-competitive 18V cordless hammer driver drill powered by 1.5Ah Li-ion battery, featuring:

- Single sleeve keyless drill chuck for easy bit installation/removal
- Compact and lightweight design for easy handling

3.0Ah Li-ion battery can be also used as a power unit.

14.4V model is also available as Model BHP343.
(See Technical information of BHP343 for detailed information.)



Dimensions: mm (")	
Length (L)	240 (9-7/16)*1
	232 (9-1/8)*2
Width (W)	79 (3-1/8)
Height (H)	227 (8-15/16)*3
	244 (9-5/8)*4

*1: for countries of North America and Latin America
*2: for other countries
*3: with Battery BL1815
*4: with Battery BL1830

Model BHP453 is available in the following variations.

Model No.	Housing color	Battery type	Battery quantity	Battery cover	Charger	Plastic carrying case	Offered to
BHP453Z	Makita-blue	No	---	No	No	No	UK
BHP453H	Makita-blue	BL1815 (Li-ion 1.5Ah)	2	1	DC18SD	Yes	USA, Canada Mexico, Panama
BHP453SHE							All countries except the four listed above
BHP453RFE	Makita-blue	BL1830 (Li-ion 3.0Ah)	2	1	DC18RA	Yes	
BHP453HW	white	BL1815 (Li-ion 1.5Ah)	2	1	DC18SD	Yes	USA, Canada Mexico, Panama

► Specification

Battery	Voltage: V	18
	Capacity: Ah	1.5/ 3.0
	Cell	Li-ion
Max output: W		230
No load speed: min-1=rpm	High	0 - 1,300
	Low	0 - 400
Impacts per minute: min-1=ipm	High	0 - 19,500
	Low	0 - 6,000
Capacity of drill chuck: mm (")		1.5 - 13 (1/16 - 1/2)
Capacity: mm (")	Steel	13 (1/2)
	Wood	36 (1-7/16)
	Masonry	13 (1/2)
Torque setting		16 stage + drill mode
Clutch torque setting: N.m (in.lbs)		1.0 - 4.0 (9 - 35)
Lock torque: N.m (in.lbs)		38 (340)
Max. fastening torque: N.m	Hard joint	42
	Soft joint	27
Electric brake		Yes
Mechanical speed control		Yes (2 speed)
Variable speed control		Yes
Reverse switch		Yes
Net weight: kg (lbs)		1.7 (3.7)***3**/ 1.9 (4.2)***4**

*3: with Battery BL1815
*4: with Battery BL1830

Note: The standard equipment for the tool shown above may differ by country.

► Standard equipment

+- Bit 2-65 (double-end) ..... 1 pc

Note: The standard equipment for the tool shown above may differ by country.

► Optional accessories

Battery BL1815
Battery BL1830
Fast charger DC18RA
Charger DC18SD
Charger DC24SA (for North America only)
Charger DC24SC (for all countries except North America)
Drill bits for wood
Drill bits for steel
Drill bits for masonry
Driver bits

Repair

CAUTION: Remove the battery and the bit from the machine for safety before repair/ maintenance!

[1] NECESSARY REPAIRING TOOLS

Description	Use for
Hex wrench 8	Removing /mounting Keylss drill chuck
Plastic hammer	Removing Keyless drill chuck

[2] LUBRICATION

It is not required to lubricate the gear section. Use Makita genuine Gear assembly that is factory-lubricated when repairing.

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Keyless Drill Chuck

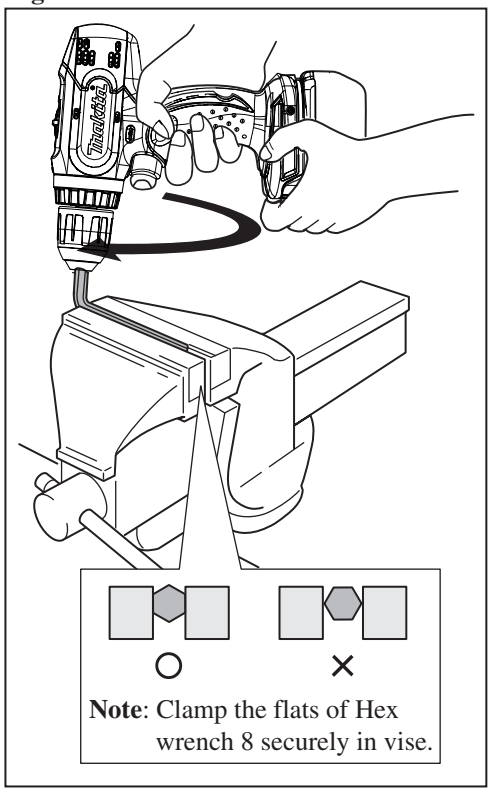
DISASSEMBLING

Note: (1) It is required to remove Keyless drill chuck at first when replacing Gear ass'y.
When parts other than Gear ass'y are related to repair, removing Keyless drill chuck is not required.
(2) If it is impossible to remove Keyless drill chuck in the following manner, use 1R359 (Chuck removing tool) to remove it. Refer to Makita repair tool list.

1) Open the jaws of Keyless drill chuck fully, and remove M6x22 - Flat head screw (left-handed and threadlocker coated) by turning **clockwise** using cordless impact driver in Forward rotation mode with slotted bit.
2) Fix the short leg of a hex wrench 8 in Keyless drill chuck, then clamp the long leg of the Hex wrench 8 securely in vise.
3) Set Action mode change lever of the machine in Drill mode, Speed change lever in Low speed, and F/R change lever in Reverse rotation mode.
4) Install Battery and hold the machine securely with both hands, then remove Keyless drill chuck from Gear ass'y by pulling Switch trigger slowly to minimize the impact of kickback. (**Fig. 1**)

Important:
The machine rotates in the direction of the arrow with very strong force at the moment when Switch trigger is pulled.
Therefore, be careful not to pinch your hand or finger between the machine and the vise.

Fig. 1



ASSEMBLING

1) Turn Keyless drill chuck clockwise until it sits on the end of the threaded portion of spindle of Gear ass'y.
2) Hold the short leg of Hex wrench 8 with Keyless drill chuck, and fix the long leg of Hex wrench 8 in vise. Install Battery. Then set Action mode change lever of machine in Drill mode, Speed change lever in Low speed, and F/R change lever in Forward rotation mode.
3) Slowly pull the switch trigger to rotate spindle until the motor is locked.
Important: Be sure to release the switch trigger just after Spindle is locked.
4) Secure Keyless drill chuck with M6x22 - Flat head screw by turning **counterclockwise** using cordless impact driver with slotted bit.
Note: If you reuse the removed M6x22 - Flat head screw, apply threadlocker (ThreeBond 1321B/ 1342 or Loctite 242) to the threaded portion.

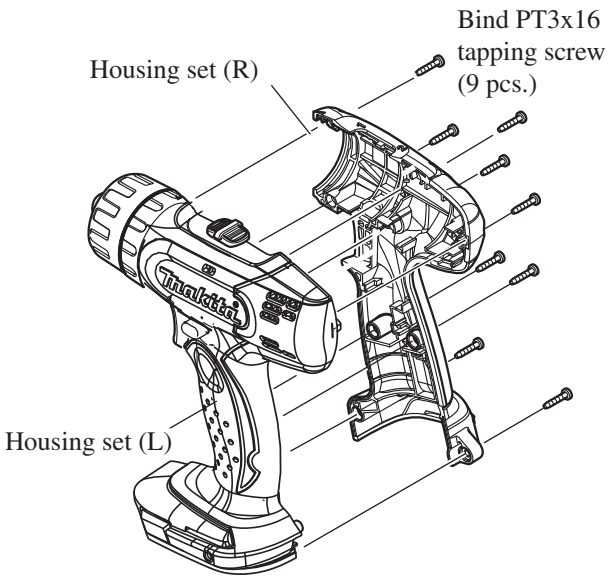
Repair

[3] DISASSEMBLY/ASSEMBLY
[3] -2. Gear Ass'y and DC Motor

DISASSEMBLING

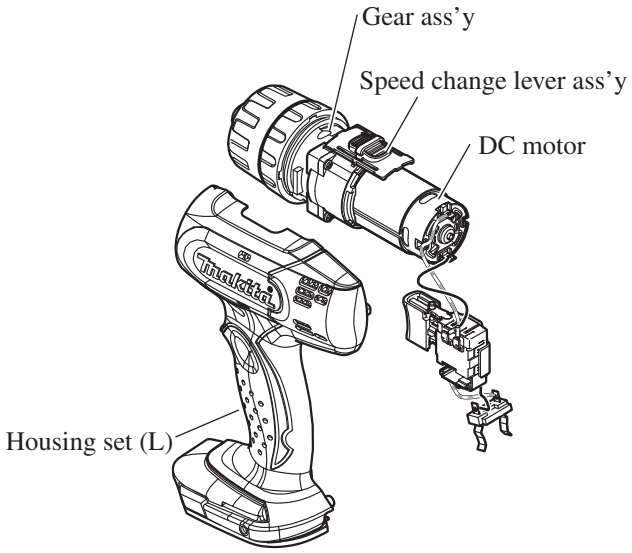
(1) Remove Keyless drill chuck.
(2) Gear ass'y and DC motor can be disassembled in the order of **Figs. 2 to 6.**

Fig. 2



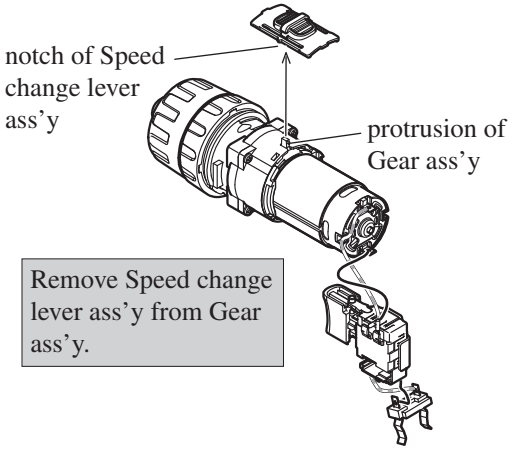
Disassemble Housing set (R) by removing Bind PT3x16 tapping screws (9 pcs.).

Fig. 3



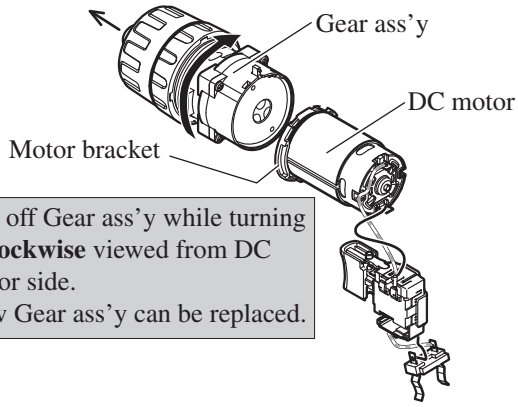
Remove Gear ass'y, Speed change lever ass'y and DC motor with Switch from Housing set (L) as illustrated above.

Fig. 4



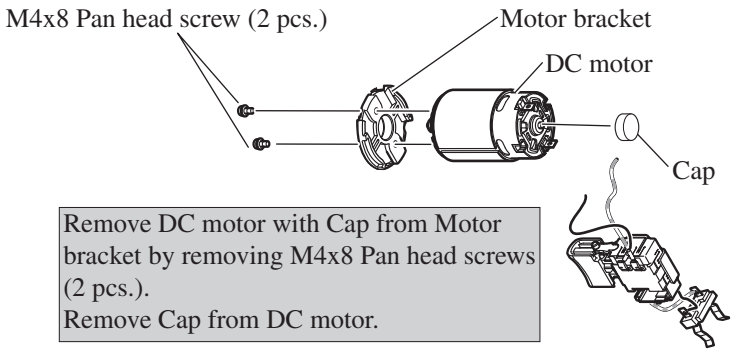
Remove Speed change lever ass'y from Gear ass'y.

Fig. 5



Pull off Gear ass'y while turning it **clockwise** viewed from DC motor side.
Now Gear ass'y can be replaced.

Fig. 6



Remove DC motor with Cap from Motor bracket by removing M4x8 Pan head screws (2 pcs.).
Remove Cap from DC motor.

► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-2. Gear Ass'y and DC Motor (cont.)

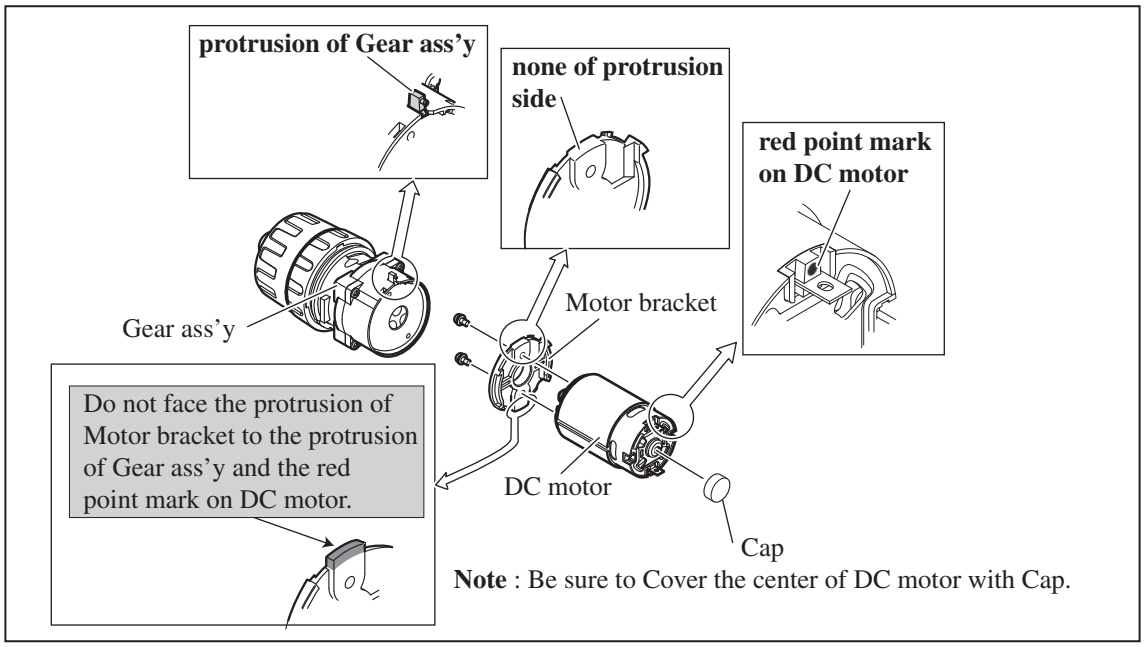
ASSEMBLING

Do the reverse of the disassembling steps.

The following portions of DC motor, Motor bracket and Gear ass'y have to face the same side. (**Fig. 7**)

* Red point mark (designated as plus terminal) on DC Motor
* None of protrusion side of Motor bracket
* protrusion of Gear ass'y

Fig. 7



[3]-3. Speed Change Lever

ASSEMBLING

(1) When assembling Speed change lever ass'y, make sure that Compression springs 4 (2 pcs.) are assembled to its bottom in advance. (**Fig. 8**)

(2) Fit the protrusion of Gear ass'y into Compression spring 4 in Speed change lever ass'y . (**Fig. 9**)

(3) After mounting, set Speed change lever ass'y to low speed mode or high speed mode. (**Fig. 10**)

Fig. 8

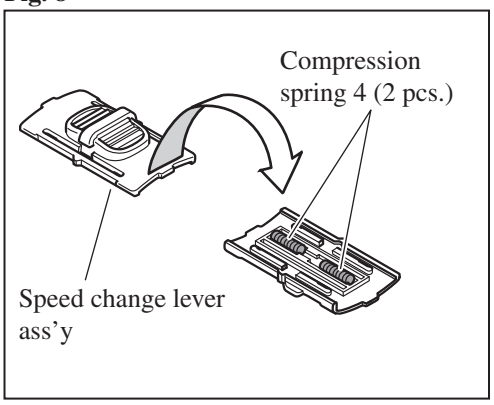


Fig. 9

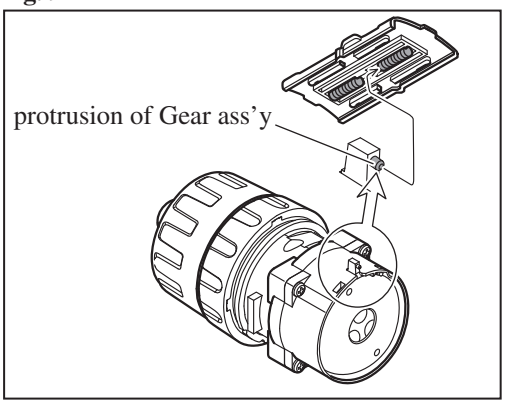
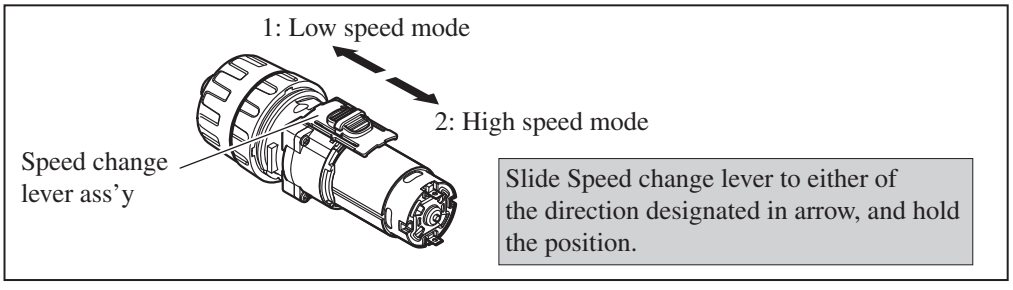


Fig. 10



Repair

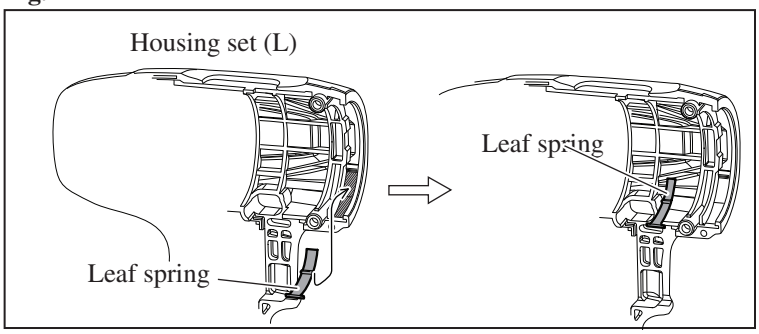
[3] DISASSEMBLY/ASSEMBLY

[3]-4. Leaf Spring

ASSEMBLING

Leaf spring has to be mounted to Housing set (L) as illustrated in **Fig. 11** before assembling Gear ass'y and DC motor.

Fig. 11

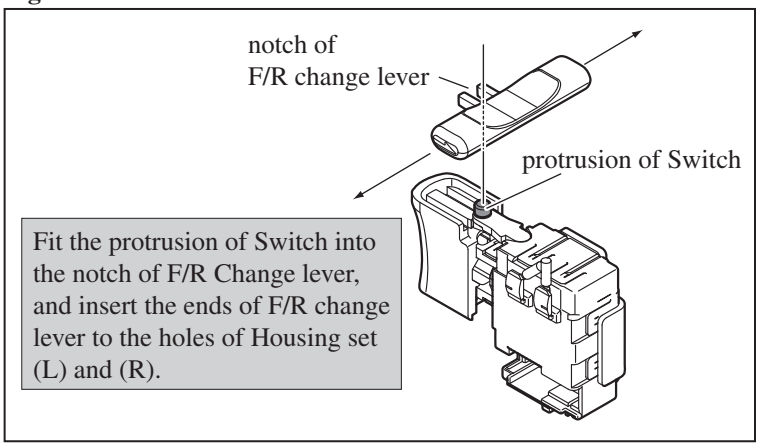


[3]-5. F/R Change Lever

ASSEMBLING

F/R Change lever can be assembled to Switch as illustrated in **Fig. 12**.

Fig. 12



[3]-6. Cushion

ASSEMBLING

Be sure to install Cushion into Housing set (L) as illustrated in **Fig. 13R.**
Note: **Fig. 13F** is the wrong installation. Pay attention to the direction.

Fig. 13R

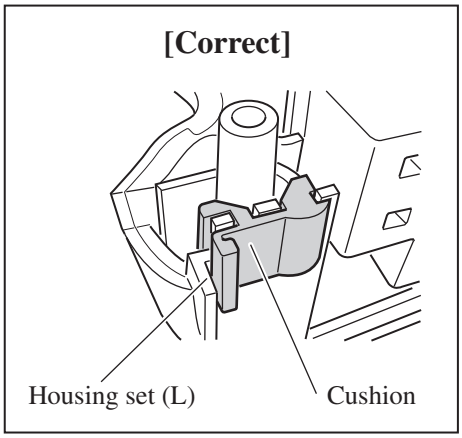
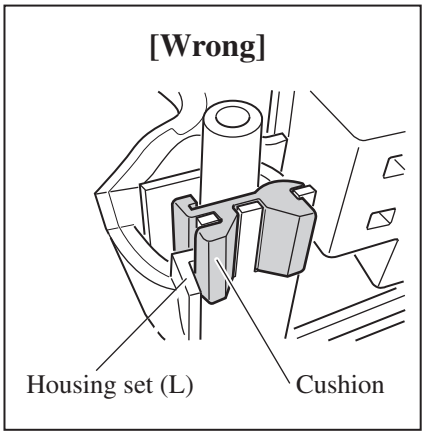
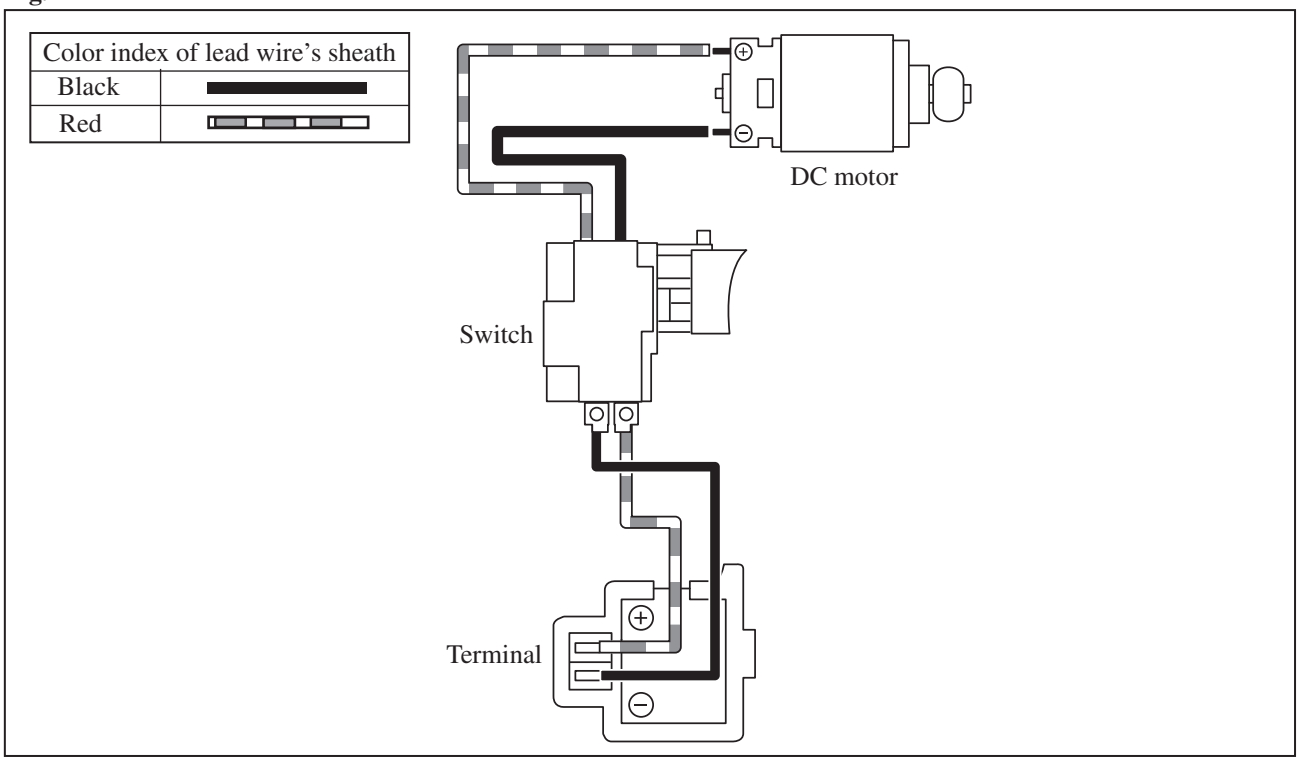


Fig. 19F



Circuit diagram

Fig. D-1



Wiring diagram

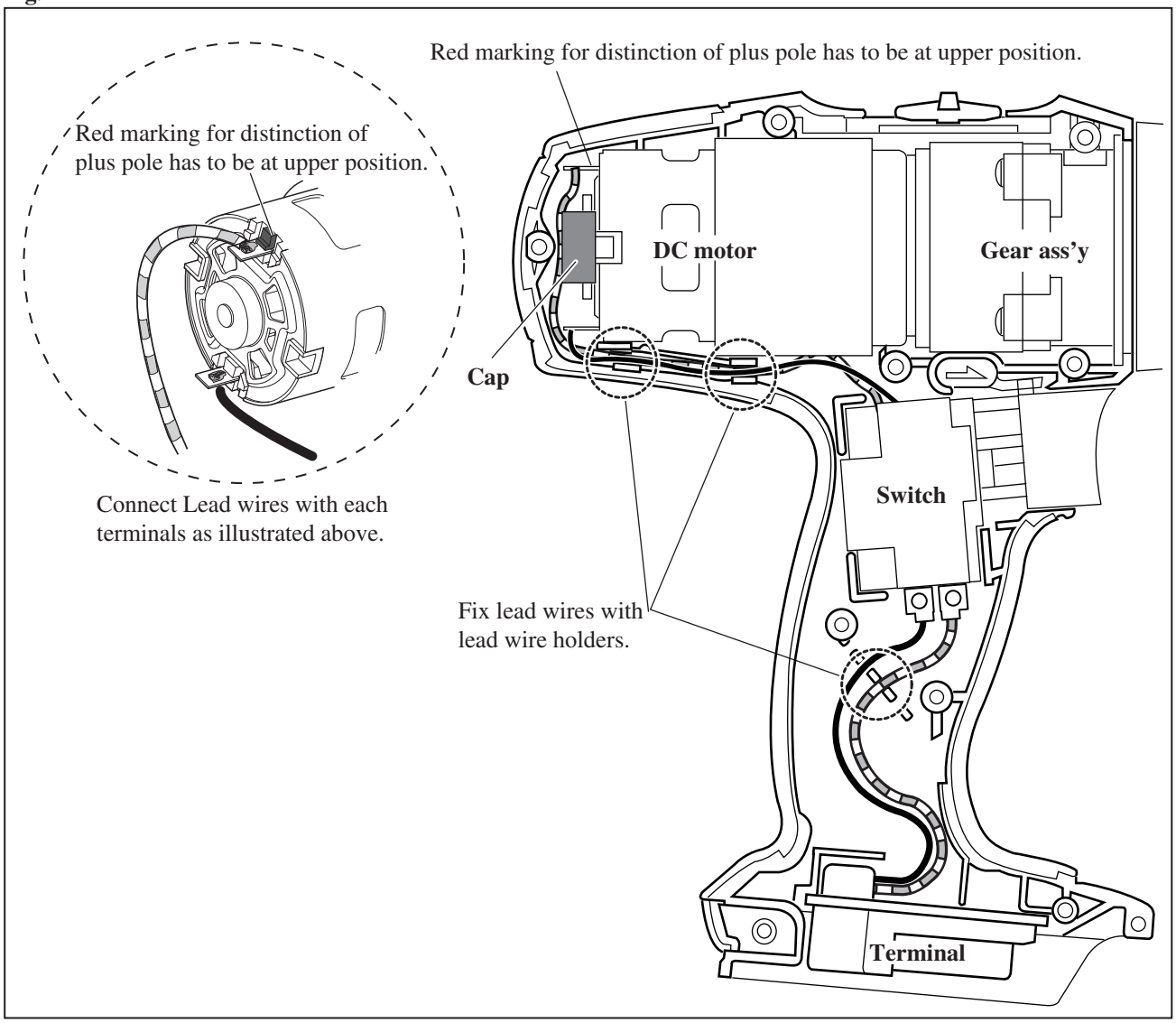



Fig. D-2